UNITED STATES PATENT AND TRADEMARK OFFICE

NOTICE OF ALLOWANCE AND FEE(S) DUE

69316	7590	09/23/2010

MICROSOFT CORPORATION
ONE MICROSOFT WAY
REDMOND, WA 98052

EXAMINER
SHAH, PARAS D

ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 09/23/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,451	01/20/2004	Dong Yu	306536.01	3046

TITLE OF INVENTION: AUTOMATIC SPEECH RECOGNITION LEARNING USING USER CORRECTIONS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	12/23/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: <u>Mail</u>

Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

or <u>Fax</u> (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

69316   7590   09/23/2010

MICROSOFT CORPORATION
ONE MICROSOFT WAY
REDMOND, WA 98052

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

_____ (Depositor's name)

_____ (Signature)

_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,451	01/20/2004	Dong Yu	306536.01	3046

TITLE OF INVENTION: AUTOMATIC SPEECH RECOGNITION LEARNING USING USER CORRECTIONS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	12/23/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
SHAH, PARAS D	2626	704-231000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE   (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____   Date _____

Typed or printed name _____   Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,451	01/20/2004	Dong Yu	306536.01	3046

			EXAMINER
69316	7590	09/23/2010	SHAH, PARAS D

MICROSOFT CORPORATION
ONE MICROSOFT WAY
REDMOND, WA 98052

ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 09/23/2010

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 669 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 669 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

	Application No.	Applicant(s)
Notice of Allowability	10/761,451	YU ET AL.
	Examiner	Art Unit	
	PARAS SHAH	2626	

*-- The **MAILING DATE** of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *response to non-final action filed on 07/21/2010*.

2. ☒ The allowed claim(s) is/are *7,18,19,32,37 and 38*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the

            International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____.

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO/SB/08),
    Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit
    of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413),
    Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____.

/P. S./
Examiner, Art Unit 2626

DETAILED ACTION

1.   This communication is in response to the Amendments and Arguments filed on

07/21/2010. Claims 7, 18, 19, 32, 37, and 38 remain pending and have been examined.

The Applicants' amendment and remarks have been carefully considered and have

overcome the previous rejections. Hence, the case is in condition for allowance.

2.   All previous objections and rejections directed to the Applicant's disclosure and

claims not discussed in this Office Action have been withdrawn by the Examiner.

Reasons for Allowance

3.   Claims 7, 18, 19, 32, 37, and 38 allowed.

4.   The following is an examiner's statement of reasons for allowance:

The closest prior art of record teaches Stevens *et al.* teaches a method of

learning with an automatic speech recognition system, the method comprising;

detecting a change to dictated text (see col. 26, lines 17-24, and lines 31-39, where the

system recognizes an edit or revision); utilizing a computer processor that is a

component of a computing device to automatically infer whether the change is a

correction, or editing (see col. 26, lines 17-24, and lines 31-39, where the system

recognizes an edit or revision); and if the change is inferred to be a correction,

selectively learning from the nature of the correction without additional user interaction

(see col. 26, lines 31-39, acoustic models are adapted based on user changes and

recognition results), wherein selectively learning from the nature of correction includes:

a user's pronunciation deviated from an existing pronunciation known by the system by

doing a comparison (see col. 27, lines 1-21, where a comparison of an original acoustic model and a edited acoustic model is compared); determining if the corrected word exists in the user lexicon (see col. 26, lines 52-60, where the best representation of the word is determined for adaptation), selectively changing a parameter associated with the pronunciation (see col. 27, lines 1-21, when the difference is within a threshold then the acoustic model is adapted). However, Stevens does not specifically teach to selectively changing at least one parameter, forced alignment, the two separate determinations, and the confidence score being calculated using the function "1/[d/f/log(len 1 +len2)], where d is the distance between the recognized pronunciation and a best match in a lexicon, f is a frequency that the same pronunciation is pronounced, and lenl and len2 are the lengths of phonemes in a new pronunciation and the closest pronunciation.

Honda does teach to selectively change at least one parameter (see col. 7, lines 6-12, where acoustic model adaptation alter parameters such as the average vale and variance that defines the transition probability of the HMM). However, Honda does not specifically teach the two separate determinations, forced alignment, and the confidence score being calculated using the function "1/[d/f/log(len 1 +len2)], where d is the distance between the recognized pronunciation and a best match in a lexicon, f is a frequency that the same pronunciation is pronounced, and lenl and len2 are the lengths of phonemes in a new pronunciation and the closest pronunciation.

Beaufays et al. does teach the forced alignment of a wave (see page 2594, sect. 2, step 1, where a forced alignment of two waveforms is performed) based on at least

one context word (see page 2574, sect. 2, step 2, where the context is use to determine

a region of worst acoustic match and in step 3, alternative pronunciations are

suggested). such as the average vale and variance that defines the transition probability

of the HMM). However, Beaufays does not specifically teach the two separate

determinations, and the confidence score being calculated using the function

"1/[d/f/log(len 1 +len2)], where d is the distance between the recognized pronunciation

and a best match in a lexicon, f is a frequency that the same pronunciation is

pronounced, and lenl and len2 are the lengths of phonemes in a new pronunciation and

the closest pronunciation.

Nassiff *et al.* teaches a method of learning with an automatic speech recognition

system, the method comprising: detecting a change to dictated text (see col. 5, lines

33-40, based on deletion or typing over the words); inferring whether the change is a

correction, or editing (see col. 5, lines 33-48, correction or editing is determined based

on deletion (editing) or typing over the words (correction.); and wherein inferring

whether the change is a correction includes comparing a speech recognition engine

score (see col. 6, lines 28-31) of the dictated text and of the changed text (see col. 7,

lines 50-62); if the change is inferred to be a correction, selectively learning from the

nature of the correction without additional user interaction (see col. 6, lines 45-50),

wherein selectively learning from the nature of correction includes determining if the

corrected word exists in the user lexicon, selectively learning the pronunciation (see col.

6, lines 45-50, the language model is updated when the replacement word is found on

the alternative word list.). Furthermore, Nassiff does teach the determination if a user's

pronunciation deviated from existing pronunciations known by the system by a predetermined statistical quantity and if it is found in the system (see Figure 4). However, Nassiff does not specifically teach the predetermined statistical quantity being calculated using the function "$1/[d/f/\log(len\ 1 + len2)]$, where d is the distance between the recognized pronunciation and a best match in a lexicon, f is a frequency that the same pronunciation is pronounced, and lenl and len2 are the lengths of phonemes in a new pronunciation and the closest pronunciation.

The present invention's use of the confidence metric enables pronunciation to be selectively added while preventing errors from misalignment, incorrect inferences, and without decreasing system effectiveness (see Applicant's Specification, page 23, last paragraph).

None of the cited reference either alone or in combination thereof teach or suggest the "detecting", "inferring", "learning", "building", and "generating" along with the confidence score being calculated using the function "$1/[d/f/\log(len\ 1 + len2)]$, where d is the distance between the recognized pronunciation and a best match in a lexicon, f is a frequency that the same pronunciation is pronounced, and lenl and len2 are the lengths of phonemes in a new pronunciation and the closest pronunciation, respectively." as recited in claims 7 and 37.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

        Backfried et al. (US 6,801,893) is cited to disclose adding new words to a

vocabulary based on pronunciation.

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to PARAS SHAH whose telephone number is (571)270-

1650. The examiner can normally be reached on MON.-THURS. 7:30a.m.-4:00p.m.

EST.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, James Wozniak can be reached on (571)272-7632. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James S. Wozniak/
Supervisory Patent Examiner, Art
Unit 2626

/Paras Shah/
Examiner, Art Unit 2626

09/15/2010